Germanium Sesquioxide Summary for Intravenous use

As used at Anderson Medical Specialty Associates and in the Bastyr University Clinical Research Center (BCRC).

Paul S. Anderson: Last Update 08-31-2014

INTRAVENOUS GERMANIUM SESQUIOXIDE:

Germanium Sesquioxide (GS) has great potential in the treatment of patients with cancer and chronic illnesses. It has been studied in Asia and Russia for many decades and has had safe intravenous use in the US for over twenty years. In studies it has been shown to induce interferon-gamma (IFN-gamma) [1], enhance natural killer cell activity [1,2], and inhibit tumor and metastatic growth [1]. In addition, oral consumption of GS has been reported to be readily assimilated and rapidly cleared from the body without evidence of toxicity. Our own unpublished clinical experience is that as an IV additive it is safe when infused under standard dose and safety guidelines [3].

INTRAVENOUS USE GUIDELINES:

Dose: [3]

- Test dose at 200-400 mg IV on the first day
- Subsequent doses could increase to 1000 - 6000 mg if tolerated two to three times weekly
    - See GI tolerance notes below
    - Only increase dose by 500 mg per IV
- Experimental evidence in the use of GS as an NK Cell stimulant favors once weekly dosing [2]

Administration:

- Intravenous dosing via either a central or peripheral line.
- Carrier solutions:
    - Dextrose 5% in Water (D5W) 100 to 1000 mL carrier solution
    - 0.9% normal saline (NS) or 0.45% (1/2NS) 100 to 1000 mL carrier solution
- Rate of administration: 60 to 180 minutes as tolerated by the patient
    - Monitor for signs of nausea which can be the first sign of a non-tolerated dose [3]
    - For allergic / anaphylactic reaction treat per standard protocol.
- Other IV compatibility:

- May be mixed with any water soluble vitamin / mineral IV solution [3]

Screening:

- Intolerance to oral GS is a caution and may exclude use in the IV setting
- Lab studies:
    - CBC, Chemistry panel (Metabolic panel including electrolytes, bilirubin, AST/ALT/GGT, eGFR/BUN/CRE). NK Cell Function Studies if following NKCF activity

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References:

1. Kaplan BJ, Parish WW, Andrus GM, Simpson JS, Field CJ. Germane facts about germanium sesquioxide: I. Chemistry and anticancer properties. J Altern Complement Med. 2004 Apr;10(2):337-44. PMID: 15165414

2. Tanaka N, et. al. Augmentation of NK activity in peripheral blood lymphocytes of cancer patients by intermittent GE-132 administration. Gan To Kagaku Ryoho. 1984 Jun;11(6):1303-6. PMID: 6732257

3. Anderson P, Cochran B. Personal experiences with the clinical use of intravenous Germanium Sesquioxide. AMSA, BIORC and Private clinic data. Seattle Washington,2014